



Overview

Brazil has a large and diversified economy that offers US companies many opportunities to export their goods and services. As Brazil's largest single trading partner, the US enjoys a strong reputation in a variety of sectors. This report is one of a series that is published by the US Commercial Service's team of sector experts throughout the year. If you do not see an opportunity for your product here, please check out our other reports at www.buyusa.gov/brazil and consider contacting us directly to find out if we can help you export to Brazil.



SPECTRUM MANAGEMENT IN BRAZIL – Frequently Asked Questions

- 1. Responsible Authority: Which organizations are involved in spectrum management in Brazil? To whom are they responsible – executive branch, legislative branch, military – or are they autonomous?**

In Brazil, the management of the radio spectrum is performed by a **Regulatory Agency, the National Telecommunications Agency – ANATEL**.

ANATEL is an entity integrating the indirect Federal Public Administration, subject to special government agency rules and connected to the Ministry of Communications, acting as the telecommunications regulatory organ, with headquarters in the Federal District (Brasília), and with powers to set up regional units.

ANATEL has the Board of Directors as its maximum entity, having also an Advisory Board, a General Council Office, besides the specialized units holding various functions.

The special government agency nature granted to ANATEL is characterized by administrative independence, lack of hierarchical subordination, fixed mandate and stability of its directors, as well as financial autonomy. The concept of ANATEL is to act as an independent administrative authority, providing itself with the necessary prerogatives to adequately exercise its authority. However, in the past two years the Ministry of Telecommunications is controlling more closely the activities of ANATEL and taking the responsibility for political decisions like the definition of the standard to be chosen for the adoption of Digital TV in country.

ANATEL takes the necessary measures to satisfy the public interest and for the development of telecommunications in Brazil, acting independently, impartially, legally, impersonally and publicly, and especially:

- I - within the scope of its attributions, to implement the national telecommunications policy;

- II - to represent Brazil before international communications entities, under the coordination of the Executive Branch;
- III - to develop and propose to the President of the Republic, through the Minister of Communications, the adoption of measures that refer to: implementation or elimination of the rendering of services in the public system classification, with or without the rendering of services in the private system classification; approval of the general granting plan for services rendered under public system; approval of the general objective plan towards a progressive universalization of services rendered under public system and authorization for the participation of Brazilian companies in intergovernmental consortia or organizations destined to providing means or rendering of telecommunications services, submitting the first three, in advance, for public comments;
- IV - to enact rules on grant, rendering and use of telecommunication services under the public system;
- V - to enact grants and extinguish the right of exploiting the service under the public system;
- VI - to enter into and manage grant contracts and supervise the rendering of services under the public system, imposing sanctions and making interventions;
- VII - to control, monitor and revise tariffs for services rendered under the public system, and to set tariffs according to the conditions provided by this Law, as well as to ratify adjustments;
- VIII - to manage the radio-frequency spectrum and the use of orbits, issuing the respective rules;
- IX - to issue grant acts and extinguishing rights of use of radio frequency and orbit, supervising and applying sanctions;
- X - to enact rules on rendering telecommunication services under the private system;
- XI - to grant and extinguish authorizations to render services under a private system, supervising and applying sanctions;
- XII - to issue norms and standards to be followed by telecommunication service providers regarding equipment utilization;
- XIII - to issue or recognize product certification, in accordance with norms and standards established by ANATEL;
- XIV - to issue norms and standards that ensure compatibility to the integrated operation and interconnection between networks, also encompassing terminal equipment;
- XV - to perform search and seizure of goods within its authority;
- XVI - to decide within the administrative scope, on the interpretation of the telecommunications legislation and provide on default cases;
- XVII - to settle conflicts of interest among telecommunication service providers;
- XVIII - to repress violations to user rights;
- XIX - to exercise legal authority in connection with telecommunications, in the control, prevention, and repression of violations against the economic order, except for the authority belonging to the Economic Defense Administrative Council - CADE;
- XX - to propose to the President of the Republic, through the Ministry of Communications, declaration of public interest, for purposes of expropriation or establishment of public easement of goods necessary to the implementation or maintenance of the service under the public system;

- XXI - to collect and apply its revenues;
- XXII- to decide as to the performance, change or termination of its contracts, as well as to the hiring and dismissal of employees, using the necessary procedures as provided by the regulation;
- XXIII- hire personnel, for undetermined periods of time, pursuant to the provisions of Law nº 8.745, of December 9th, 1993;
- XXIV- to acquire, manage and dispose of its assets;
- XXV - to decide ultimately on matters within its competence, appeals being always permitted to the Board of Directors;
- XXVI- to submit the budget plan to the Ministry of Communications;
- XXVII- to approve its internal rules;
- XXVIII- to prepare an annual report of its activities, emphasizing compliance with the sector's policy as defined in the previous article;
- XXIX- to send the annual report of its activities to Ministry of Communications, and to the National Congress by way of the Presidency of the Republic;
- XXX - periodically review plans listed in items II and III of the previous article, submitting them to the President of the Republic for approval, by way of the Ministry of Communications;
- XXXI- to promote integration with telecommunications administrations of Mercosul member countries, with the objective of achieving common interest goals.

2. Assignment Process: What are the mechanism(s) Brazil uses to assign spectrum (for example, auctions, lotteries, and comparative hearings). To what services and/or bands are such mechanisms applied?

The exploitation of service under the private or public system shall depend upon previous authorization or concession from ANATEL, which will generate the right of use of the necessary radio-frequencies.

The operation of radio communication transmitting station shall be subject to previous operation license, and to permanent inspection, pursuant to the terms and conditions of the regulations.

The use of radio-frequency, either on exclusive or non-exclusive grounds, shall depend upon the previous grant from ANATEL, by means of an authorization, pursuant to the regulations.

Authorization of use of radio-frequency is the binding administrative act associated to the grant, permit or authorization to render telecommunications service that assigns the right of use of radio-frequency to the interested party, for a determined period of time under the legal and regulatory conditions.

The following shall NOT depend upon a grant:

- I - the use of radio-frequency by means of restricted radiation equipment defined by ANATEL;
- II - the use, by the Armed Forces, of radio-frequencies in bands destined exclusively for military purposes.

The efficiency of the authorization of use of radio-frequency shall depend upon the publication of a summary thereof in the Official Gazette of the Union.

If there is technical limitation as to the use of radio-frequency and upon interest in its utilization by more than one bidder, for the purpose of service expansion and, in having or not other parties interested in rendering the same form of service, the following shall be observed:

- I - the authorization of use of radio-frequency shall depend upon a bidding process, in the form and conditions set forth in Articles 88 through 90 herein, and same shall always be charged for;
- II - the winner of the bid shall receive, depending on the case, the authorization for the use of the radio-frequency, for the purpose of expanding the service, or the authorization to render said service.

The authorization of use of radio-frequencies shall have the same validity term of the concession or permit to render the telecommunications service to which same is bound.

In case of authorized services, the validity term shall be twenty years, extendible once for an equal term.

The extension may be requested up to three years prior to the termination date of the original term, and the request shall be decided within a maximum of twelve months.

The denial may only occur if the interested party is not making rational and adequate use of the radio-frequency, if repeated violations have been committed in its activities or if it is necessary to change the destination of the radio-frequency use.

The authorization for use of radio-frequencies is not transferable, without the corresponding concession, permit or authorization transfer of the concerned service.

The authorization of use of radio-frequencies shall terminate at the end of its final term or in case of its irregular transfer, as well due to forfeiture, lapsing, renouncement or nullification of the authorization to render the telecommunications service same utilizes.

For purposes of regulation the use of the radio-frequencies will be authorized by service area, composed of either a municipality or geographic area, as determined by ANATEL.

All stations shall be licensed, and all radio-communication equipment, including radiating systems, shall comply with the provisions of ANATEL's General Regulation on the Certification and Ratification of Communications Products.

For purposes of optimizing the use of the radio-frequency spectrum, ANATEL may determine modifications in the requirements established in previous regulation, including for systems already in operation.

In addition, ANATEL shall only assign frequencies when the authorized service provider submits documentation demonstrating prior frequency coordination: with other authorized telecommunications entities operating in adjacent blocks within the same geographic area and with other authorized telecommunications entities operating in the same block or in adjacent blocks within different geographic areas.

The granting of authorization to use radio-frequencies shall be preceded by administrative processes that may include:

- I - Requirement of use of radio-frequency or channels of frequencies;
- II - Auction or the justification of its non-necessity;
- III - Authorization of use of radio-frequency;

3. Licensing Regime: Please describe Brazil's spectrum licensing regime. Are licenses awarded for the provision of a specific service, or a specified technology or standard? Are licenses subject to renewal?

For purposes of the authorization for use of radio-frequencies, the bands are subject to different regulations and have to be compatible with activity or service to be exploited, specifically related to channeling plan, bandwidth and type of technology employed in transmissions. Each frequency band has its specific regulation on channeling and conditions for use.

The telecommunications entities authorized to use the frequency band shall demonstrate that, in the area authorized for use of the radio frequency.

The radio-frequency spectrum is a limited resource, constituting public property, managed by ANATEL.

Upon compliance with the band allocation pursuant to international treaties and agreements, ANATEL shall keep a plan with the allocation, distribution and destination of radio-frequencies, and the necessary detailing of the use of the radio-frequencies associated to the various services and telecommunications activities, fulfilling their specific needs and expansion thereof.

The plan shall designate radio-frequencies for:

- I - exclusive military purposes;
- II - telecommunication services to be rendered under the public and private systems;
- III - broadcasting services;
- IV - emergency and public security services;
- V - other telecommunication activities.

The designation of radio-frequency bands for exclusively military purposes shall be made in conjunction with the Armed Forces.

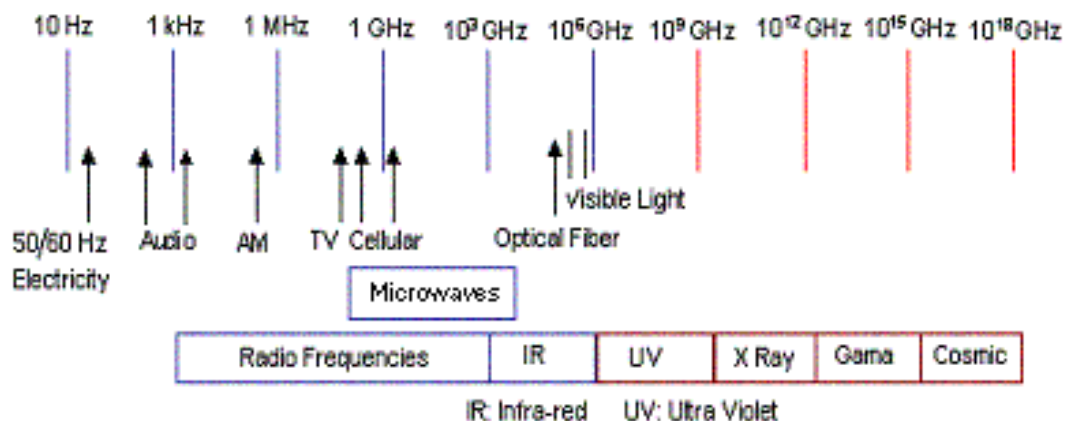
In the designation of radio-frequencies, the rational and economic use of the spectrum, as well as the existing allocations, distributions and assignments, shall be considered, aiming at avoiding degrading interference.

The use of the radio-frequency shall be conditioned to its compatibility with the activity or service to be rendered, particularly in relation to its power, the transmission band and the technique employed.

At any time, the assignment of radio-frequencies or bands may be modified, as well as a change in power or other technical characteristics may be ordered, provided the public interest or the compliance with international conventions or treaties so determine.

An adequate and reasonable period of time shall be determined for the performance of the aforementioned changes.

Frequency Spectrum



Source: ANATEL

Frequency Allocations in Brazil

Frequency (MHz)
3,5 GHz
2400-2483.5
411.675-415.850 421.675-425.850
1452- 1492
800 900 1.800
410-430 440-450

Source: ANATEL

Wireless Communications**Trunking:**

- 460-462, 465-467, 806-824, 935-940 MHz.

Cellular:

- 824-849, 869-894, 1710-1755, 1805-1850 MHz.

	Transmission Frequency (MHz) for	
	Mobile Station	Cell Site
Band A	824-835 845-846.5	869-880 890-891.5
Band B	835-845 846.5-849	880-890 891.5-894
Band D	910-912.5 1710-1725	955-957.5 1805-1820
Band E	912.5-915 1740-1755	957.5-960 1835-1850
Extension Sub-bands	907.5-910 1725-1740 1775-1785	952.5-955 1820-1835 1870-1880

Source: ANATEL

Radio Links

Frequency (GHz)	Range (MHz)	Bit Rate (Mbit/s)
0,4	406,10-413,05 423,05-430,0	0.064 - 0.32
0,4	413,05-423,05 440-450	2.4.2x2.8.4x2
1,5	1473,75-1452 1503,25-1517	2
2	2025-2110 2200-2290	21x2. 34 and 51
4	3800-4200	140 and 155
5	4400-5000	140 and 155
6	5925-6425	140 and 155
6	6430-7110	34. 51 and 2x34
7	7425-7725	2 to 155
8	7725-7925 8025-8275	140 and 155
8.5	8275-8500	2 to 51
11	10700-11700	140 and 155
15	14500-15350	2 to 17
18	17700-18140 19260-19700	8x2 to 155
18	18580-18820 18920-19160	2 to 8
23	21200-21550 22400-22750	-
23	21800-22400 23000-23600	2 to 155
25-31	25350-28350 29100-29250 31000-31300	34 to 155
38	37000-39500	2 to 155

Source: ANATEL

Spread Spectrum Radio

- 902-907.5; 915-928; 2400-2483.5; 5725-5850 MHz.

Point-Multipoint Applications (MHz)

- 1427-1452 and 1492-1517
- 3400-3600
- 10150-10300 and 10500-10650
- 25350-28350, 29100-19250 and 31000-31300

MMDS (Multichannel Multipoint Distribution Service) :

- 2170-2182 and 2500-2686 MHz

Frequency that do NOT need authorization

- Frequency for the equipments of restricted radio communication such as Wi-Fi, Radio Spread Spectrum using the following bands of frequency: 902-907,5; 915-928; 2400-2483,5; 5725-5850 MHz.

4. Licensee Privileges: What flexibility do licensees have (e.g. secondary markets) to transfer their spectrum rights to other parties? May licensees aggregate licenses or subdivide them? May licensees make all or part of their spectrum available to other entities based on geography or time? May licensees accept payment in exchange for spectrum access?

The authorization for use of radio-frequencies is not transferable, without the corresponding concession, permit or authorization transfer of the concerned service.

The authorization of use of radio-frequencies shall terminate at the end of its final term or in case of its irregular transfer, as well due to forfeiture, lapsing, renouncement or nullification of the authorization to render the telecommunications service same utilizes. Upon termination, the rights and duties in connection with the rendering of services return to the Union.

The termination of the authorization of the respective radio-frequency shall determine the termination of the service authorization.

Licensees aggregate licenses or subdivide them but it is very important that all the usage and technical project shall be approved by ANATEL and shall be comply with the proper regulation of the channels or radio-frequency.

On the other hand it is important to points out that in Brazil there is no provision of resale system or even the possibility to commercialize the use of radio-frequency.

5. Spectrum Fees: What types of fees are imposed on spectrum users? How are fees calculated? Which, if any, spectrum users are exempt from fees?

The concession, permit or authorization to exploit telecommunication services, and the use of radio-frequencies for any services will always be charged, and the respective price shall be charged pursuant to the conditions established in the Law and regulations, and the product of such collection will constitute a revenue for the Telecommunications Inspection Fund - FISTEL.

The fees depends on the usage:

- I - Bi-directional point-area applications
- II - Unidirectional point-area applications
- III - Point-to-point applications
- IV - Exclusive use: (s a mode of use in which, within a given geographic area, a frequency band is submitted to a single authorization).

V - Non-exclusive use (is a mode of use in which, within a given geographic area, a frequency band is submitted to more than one authorization).

The reference value for the right to use radio-frequencies is obtained by applying the following formula:

$P = K \times B \times A^{0.1} \times T \times F(f)$, where its parameters have the following meanings:

P = Reference value for the right to use radio-frequencies, in Reais;
K = Cost factor of radio frequency;
B = Bandwidth to be authorized, in kHz;
A = Geographic area in which the frequency shall be used, in km²;
T = Factor related to the time period of use;
F = Frequency factor, according to the expression given below;
f = Center frequency of the operating frequency band, in kHz.

The costs related to the grant of a concession, permission, or authorizations of the service are not included in this item.

The Regulation on radio-frequencies and fees applies to all persons, whether physical or legal, that make use of radio-frequencies, except for the following cases:

- I - the use of radio-frequencies by equipment of restricted radiation determined by ANATEL; and
- II - the use, by the Armed Forces, of radio frequency in the bands intended exclusively for military applications.

6. Treatment of Government versus Commercial Users: Are government or other non-commercial users subject to the same or different rules as commercial users with respect to questions 1-5 above? If yes, please describe.

The regulation on radio-frequencies and fees applies to all persons, whether physical or legal, that makes use of radio-frequencies, except for the following cases:

- I - the use of radio-frequencies by equipment of restricted radiation determined by ANATEL; and
- II - the use, by the Armed Forces, of radio frequency in the bands intended exclusively for military applications.

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For a good overview of exporting to Brazil, please look at our US Country Commercial Guide to Brazil:

www.focusbrazil.org.br/ccg

US Commercial Service in Brazil:

www.buyusa.gov/brazil

For more information on this sector in other countries, please visit Export.gov's website for US Commercial Service Market Research Worldwide:

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